WILLAS

RoHS COMPLIANT

SOT-89 Plastic-Encapsulate Transistors

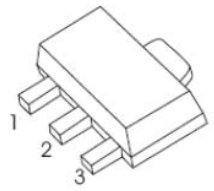
2SD1766

TRANSISTOR (NPN)

FEATURES

- Low $V_{CE(sat)}$.$V_{CE(sat)}$=0.16V(Typ.)(I_C/I_B=2A/0.2A)
- **Pb-Free package is available**
  RoHS product for packing code suffix "G"
  Halogen free product for packing code suffix "H"
- **Moisture Sensitivity Level 1**

SOT-89



1. BASE
2. COLLECTOR
3. EMITTER

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	40	V
V_{CEO}	Collector-Emitter Voltage	32	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current -Continuous	2	A
P_C	Collector dissipation	500	mW
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55-150	℃

ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=50μA, I_E=0	40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=1mA, I_B=0	32			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=50μA, I_C=0	5			V
Collector cut-off current	I_{CBO}	V_{CB}=20V, I_E=0			1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=4V, I_C=0			1	μA
DC current gain	$h_{FE(1)}$	V_{CE}=3V, I_C=500mA	82		390	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=2A, I_B=0.2A			0.8	V
Transition frequency	f_T	V_{CE}=5V, I_C=50mA, f=100MHz		100		MHz
Collector output capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz		30		pF

CLASSIFICATION OF $h_{FE(1)}$

Rank	**P**	**Q**	**R**
Range	82-180	120-270	180-390
Marking	**DBP**	**DBQ**	**DBR**

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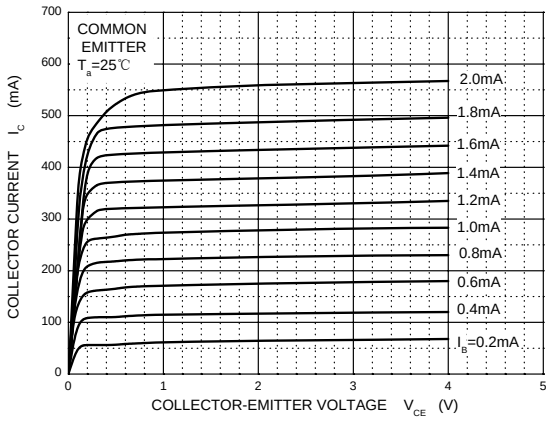
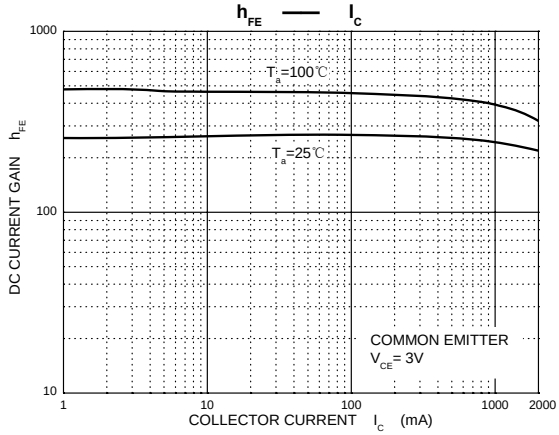
Typical Characteristics

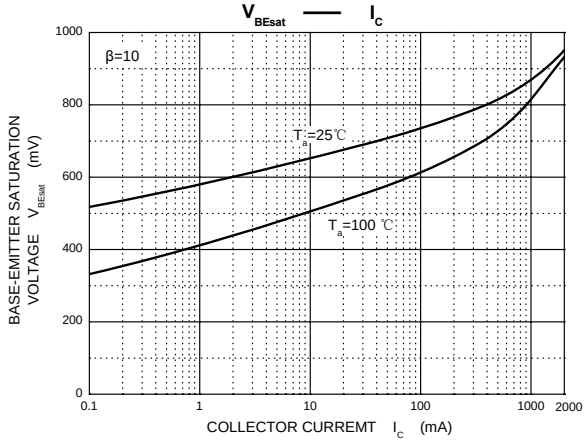
Static Characteristic



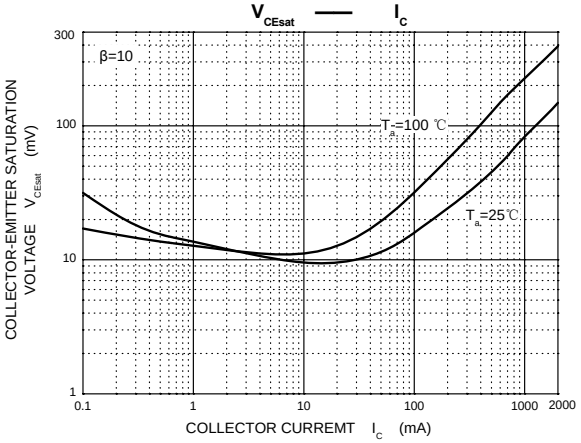
h_{FE} — I_C



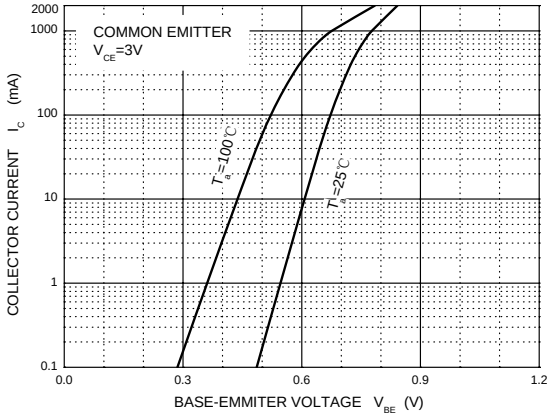
V_{BEsat} — I_C



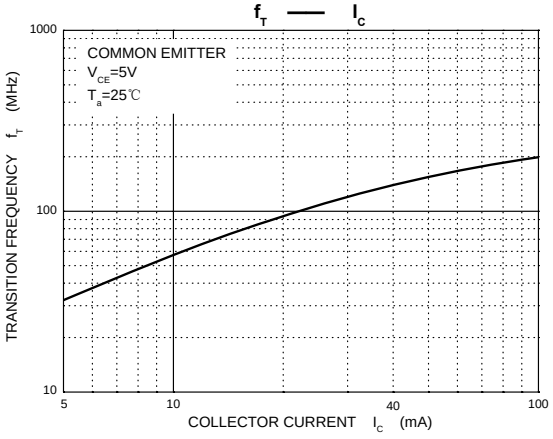
V_{CEsat} — I_C



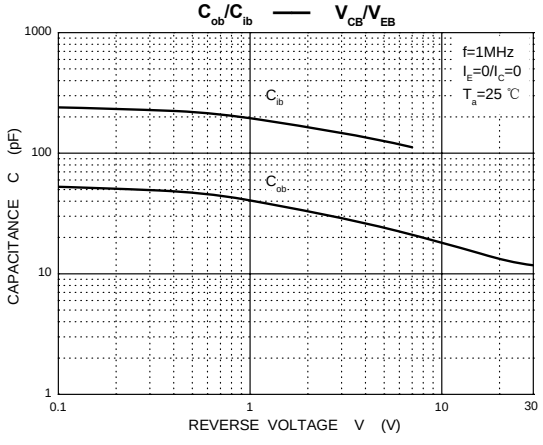
V_{BE} — I_C



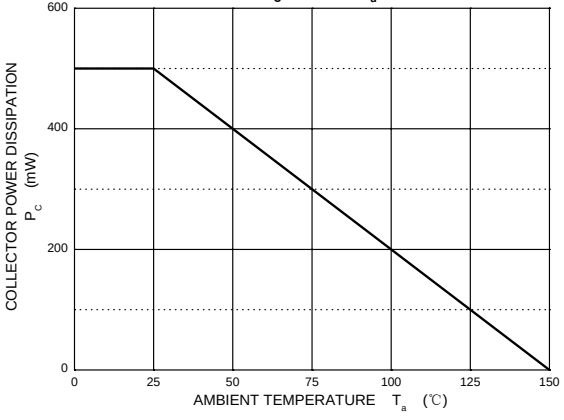
f_T — I_C



C_{ob}/C_{ib} — V_{CB}/V_{EB}



P_C — T_a



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Outline Drawing

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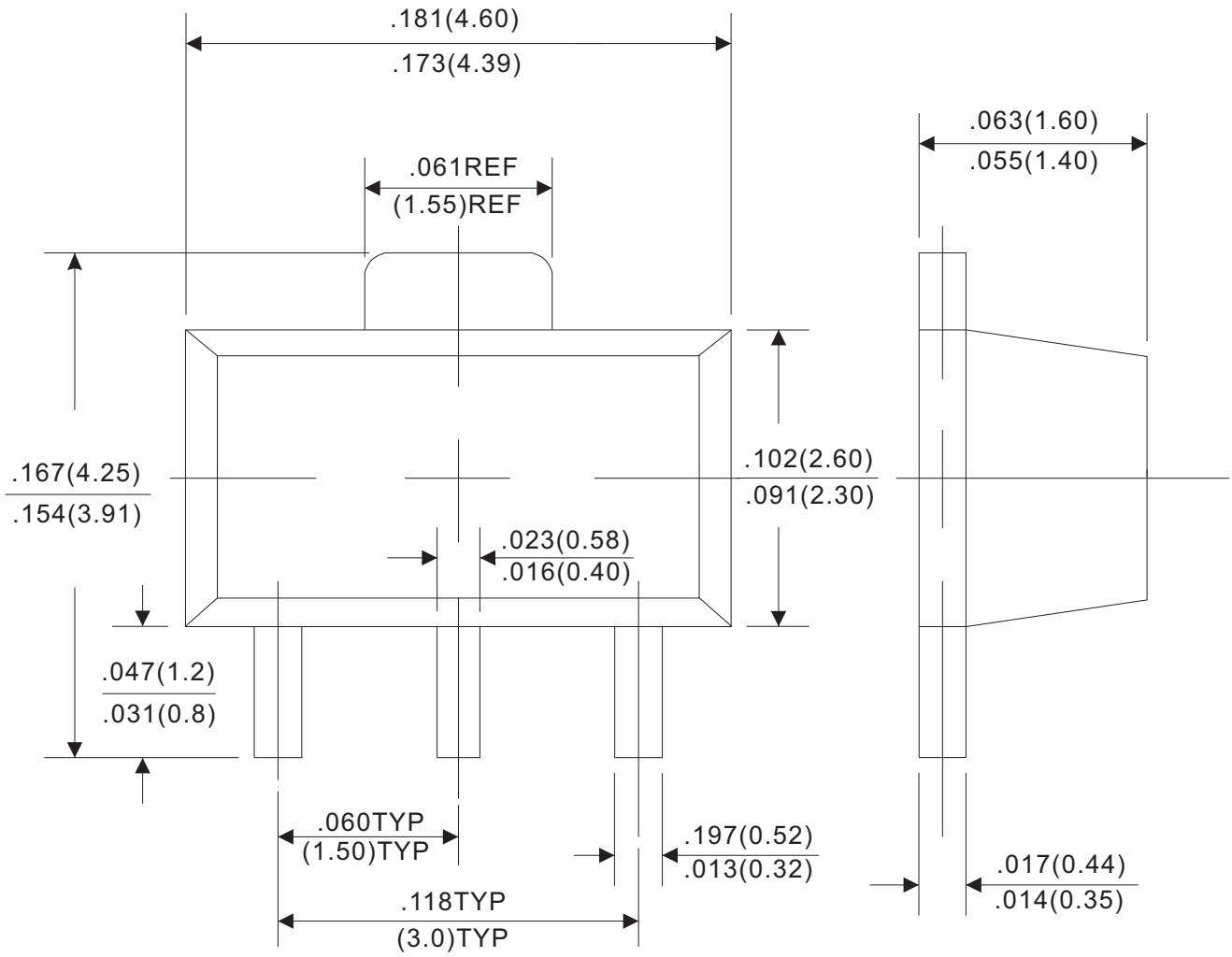

Dimensions in inches and (millimeters)

Rev.C

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Ordering Information:

Device PN	Packing
2SD1766 x(3)–SOT89 (1)G(2)-WS	Tape& Reel: 1 Kpcs/Reel

Note: (1) CASE:SOT-89

(2) RoHS product for packing code suffix ”G”；Halogen free product for packing code suffix “H”

(3) CLASSIFICATION OF h_{FE} RANK